



## Role of Micronutrients in Healthy Nutrition of Wrestlers

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**Abstract:** The article examines the role of micronutrients in the nutrition of wrestlers. In particular, special attention is paid to the importance of vitamins and minerals in the nutrition of wrestlers and their physiological aspects.

The study was conducted among student-athletes studying at the 1st and 2nd stages of the university. Their actual diet was studied by questionnaire. The results obtained were compared with generally accepted standards, on the basis of which existing changes are explained.

Based on the results of the study, an appropriate conclusions were drawn. The necessary recommendations for rationalizing the wrestlers' nutrition were also given.

**Key words:** Healthy nutrition, micronutrients, daily diet, questionnaire method, actual nutrition, promotion of healthy nutrition.

### Introduction.

Proper nutrition for athletes is critical when playing any sport. In particular, it is very important to determine the compliance of micronutrients, that is, vitamins and minerals contained in food, with the standard level, and also to study the issues of sufficiently satisfying the need for them in the activities of athletes [3]. Minerals and vitamins are actively involved in all physiological and biochemical processes occurring in the athlete's body. Not a single biochemical reaction in the body occurs without the participation of these substances [5-6].

Due to the fact that most sports constantly require qualities such as strength, speed, endurance, the body's need for vitamins and minerals increases sharply. The more intense and demanding the sport, the higher the need for microelements. Also, heavy sweating and rapid growth of muscle mass require greater consumption of the mentioned substances. Similarly, the need of wrestlers for microelements is high.

Insufficient attention of athletes to ensuring the necessary needs of the body in microelements leads to a number of problems. This situation is especially evident in the activities of athletes who do not eat according to an appropriate diet. [2].

For the body of young wrestlers, the mentioned substances are of greater importance. This situation is closely related to the speed of their growth and development processes. If there is a deficiency of one of the microelements, even if proteins, fats and carbohydrates in the food are in the required quantities, many negative changes occur in the athlete's body. Because a lack of vitamins or minerals reduces the activity of enzymes and makes it difficult to digest the food eaten. The amount of hormones secreted by the endocrine glands also changes, which affects the metabolism and energy in the body [2]. In this regard, the amount of certain microelements in the daily diet of the subjects was studied.

### Material and Methods.

The study examined the current nutritional status of athletes living in the Kashkadarya region, one of the southern regions of Uzbekistan. The subjects were wrestlers-athletes aged 17-20 years old, studying 1-2 years at Karshi State University. A total of 56 male respondents participated in the study.

The research was carried out mainly in the autumn season, in October. The actual nutritional status of the subjects was studied using a questionnaire method. Also, when studying nutrition, a combination of sociological and hygienic methods was widely used [1, 7].

The wrestlers filled out special questionnaires during the week. Based on the information recorded in the questionnaire, the level of satisfaction of the athletes' needs for microelements was determined and compared with standard values [4]. The results obtained were mathematically calculated and statistically processed in Windows Microsoft Excel 2010 and Windows Origin 6.1.

### Results.

During the study, we obtained the necessary information about the content of certain vitamins (B<sub>1</sub>, B<sub>2</sub>, B<sub>6</sub>, C, PP) and minerals (Ca, P, Mg, Fe) in the daily diet of the subjects.

The table below provides information on meeting the micronutrient needs of these surveyed individuals.

### Micronutrient content of the daily diet of student wrestlers

№	Nutrients	Result, mg	Norm, mg	Difference	
				mg	%
	<i>Vitamines, mg</i>				
1.	B <sub>1</sub> (thiamine)	6,3 ± 0,1	6	+ 0,3	105
2.	B <sub>2</sub> (riboflavin)	1,9 ± 0,03	5	- 3,1	38
3.	B <sub>6</sub> (pyridoxine)	4,27 ± 0,03	10	- 5,73	42,7
4.	C (ascorbic acid)	95,4 ± 1,28	200	- 104,6	47,7
5.	PP (nicotinic acid)	37 ± 0,16	40	- 3	92,5
	<i>Minerals, mg</i>				
6.	Calcium (Ca)	665,6 ± 4	2000	- 1334,4	33,3
7.	Phosphorus (P)	2548 ± 15,1	3000	- 452	85
8.	Magnesium (Mg)	771,3 ± 3,56	700	+ 71,3	110,2
9.	Ferrum (Fe)	37,9 ± 0,18	30	+ 7,9	126,3

According to the results obtained, the needs of young wrestlers are met only in relation to thiamine (vitamin B<sub>1</sub>) and nicotinic acid (vitamin PP): 6.3±0.1 mg and 37±0.16 mg, respectively, instead of the standard 6.0 mg and 40.0 mg. It was found that the amount of riboflavin, pyridoxine and ascorbic acid in the diet was significantly less than the established norm: 38%, 42.7% and 47.7%, respectively, compared to the norm.

Only two elements, magnesium (Mg) and ferrom (Fe), were close to or above the norm in the diet of the subjects, i.e. 110.2% and 126.3% of the norm, respectively. The number of remaining elements is significantly less than standard indicators. In particular, the need for calcium was satisfied by 33.3%, and the need for phosphorus by 85%.

Apparently, there have also been serious changes in the wrestlers' diet. In particular, the amount of riboflavin (vitamin B<sub>2</sub>), pyridoxine (vitamin B<sub>6</sub>) and ascorbic acid (vitamin C) was less than half the norm. Such an acute situation can be explained by the lack of dairy products, freshly cut greens, fruits and vegetables in the daily diet of the subjects. These foods contain large amounts of the mentioned vitamins.

Observed changes in the level of satisfaction of demand for minerals confirm our opinion. In particular, the amount of calcium in the wrestlers' diet has sharply decreased, and this element is abundant in milk and dairy products. At the same time, the amount of phosphorus in the respondents' food is significantly less than the norm. This situation also confirms our comments above.

In general, the nutritional changes observed in the actual nutrition of student wrestlers are characterized by the fact that athletes do not pay enough attention to nutritional culture and do not fully comply with the principles of a healthy lifestyle. In order to prevent such a situation, it is advisable to carry out explanatory and propaganda work among student-athletes. In these promotional activities, it is of great importance to provide up-to-date scientific information on the nutritional habits of athletes depending on age, gender, energy consumption and climatic conditions.

### Conclusion.

There are some changes associated with micronutrient deficiency in the actual nutritional status of the examined wrestlers. Most of these changes are associated with factors such as insufficient development of a culture of rational nutrition among athletes and lack of timely attention to the principles of nutrition. It should be noted that the rational organization of athletes' activities is determined not only by technical and tactical training, but also by medical and biological factors.

Implementation of a number of practical and preventive measures in order to eliminate the changes that have occurred in the subjects, including the promotion of rational nutrition among student-athletes and their coaches, paying more attention to the problems of healthy nutrition during treatment and preventive measures.

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